State Route 149

Transportation Concept Report



Caltrans District 3

March 2000



STATE ROUTE 149 TRANSPORTATION CONCEPT REPORT

BY **CALTRANS DISTRICT 3**

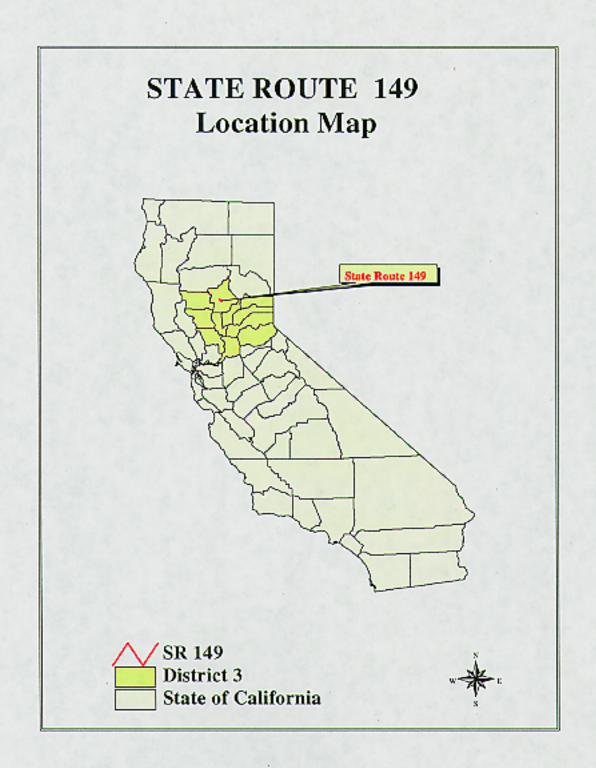
March 2000

APPROVAL RECOMMENDED:

District 3 Planning Division Chief

IRENE T. ITAMURA

District Director



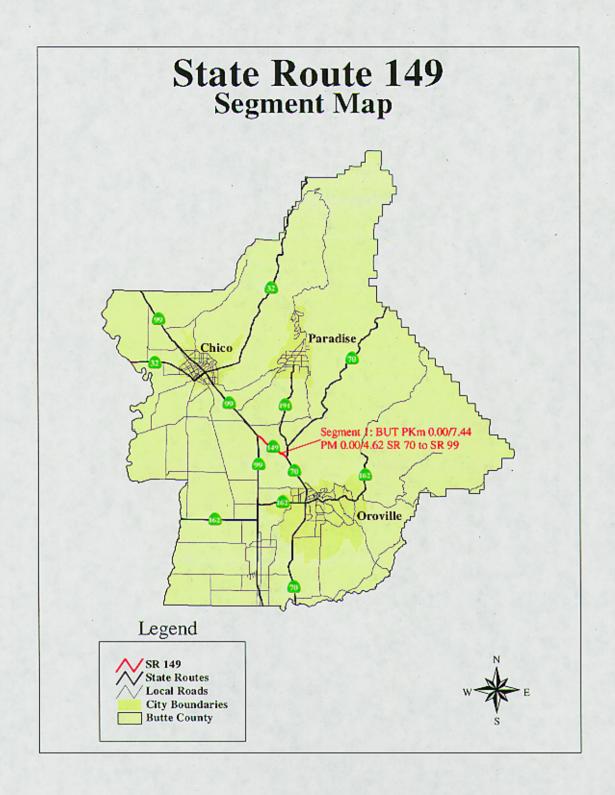


TABLE OF CONTENTS

Transportation Concept Report Summary	ii
Route Concept Rationale	ii
Introduction	1
Segment Fact Sheets.	2
Segment 1 Jct. Rte. 70 to Jct. Rte. 99	2
California Natural Diversity Database Information	5
Glossary and Definitions of Terms	6
FIGURES AND TABLES	
Location Map	. i
Segment Map	iii
Concept Summary (Table 1)	. ii

TRANSPORTATION CONCEPT REPORT SUMMARY

State Route 149

Table 1 – Concept Summary

Segment/	Post Kilometer	Postmile	Current Facility	Current LOS	Concept Facility	Concept LOS	Ultimate Transportation Corridor
1/BUT	00.000/07.438	00.000/04.623	2E	D	4F	D	6F

Concept Rationale

The route concept is based on the importance of State Route 149 as an inter-connecting link between the fast growing areas of Chico, Oroville and neighboring communities with the Sacramento area. State Route 149 is a "focus" route which means it is part of the Interregional Road System (IRRS) and one of the ten IRRS routes identified in the Interregional Transportation Strategic Plan (ITSP) for "focused" investment of State Transportation funds in the near term. State Route 149 is a lifeline link between State Route 99 and the southern segments of State Route 70.

State Routes 70 and 99 and connecting State Route 149 are presently experiencing congestion. The main contributor to congestion is population growth and resulting interregional travel due to developing and expanding communities within and adjacent to the SR 70/99 corridor. Growth forecasts for the SR 70/99 Corridor indicate that traffic levels of service (LOS) are expected to worsen, directly affecting congestion on State Route 149. Three improvement projects for the State Route 149 corridor have been funded in the STIP. The projects will improve traffic operations on State Route 149 and improve accessibility between State Routes 70 and 99. These improvements include:

- Construction of an interchange at the intersection of State Routes 149/70
- Construction of an interchange at the intersection of State Routes 149/99
- Widening from existing two lanes to a four-lane, limited access expressway the full length of State Route 149 between State Routes 70 and 99.

TRANSPORTATION CONCEPT REPORT

Introduction

Background:

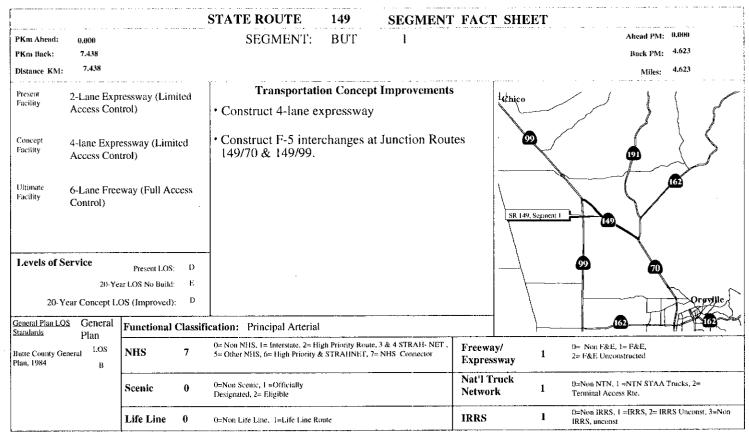
The Transportation Concept Report (TCR) is a Caltrans long-term planning document that evaluates the conditions of a given state transportation corridor, and establishes a twenty (20) year planning concept. In addition to the 20-year concept, the TCR also looks at the ultimate transportation concept that examines the corridor needs beyond the 20-year planning period. Forecasting beyond a twenty year period is difficult for several reasons, such as, unknown changes in future land use zoning (beyond 20-year general plan build-out) and unknown funding constraints. Therefore, any concept identified for the "Ultimate" period must be considered somewhat speculative and should be used cautiously.

The TCR documents the planning strategies of the long range plans identified by the Regional Transportation Planning Agencies and Metropolitan Planning Organizations within a given state highway route corridor. As state highway routes often pass through several regional planning agency jurisdictions, the TCR assimilates the regional strategies and consolidates these strategies into one corridor-specific document.

Format:

The format for the TCR has changed from its previous fully narrative report to a more concise database oriented format. This new format was designed to streamline information and to better provide a usable, up-to-date platform allowing for easy computerized access of Caltrans District 3 System Planning information. When completed, the Fact Sheet database will be made available to our transportation planning partners and the public via the Internet.

Included in this format is the California Natural Diversities Database (CNDDB) information, which identifies the status of habitats and species found within 300 meters of centerline of the existing highway facility. This CNDDB information does not represent all environmental constraints within a given corridor. A complete assessment of environmental constraints can only be determined through a detailed environmental study, such as an Environmental Impact Report or Study.



Description - Rationale - General Comments

State Route 149 is located in Butte County, California and traverses in a north-south direction approximately 4.6 miles in length from State Route 70 near Wicks Corner to State Route 99 south of Chico. State Route 149 is an undivided two-lane rural expressway with limited access control. The lanes are 12 feet in width with eight foot treated outside shoulders. SR 149 is located in a rural area entirely outside of any city limits. Its functional classification is rated as a principal arterial connecting link to a principal arterial. It is a primary route and is part of the federal aid route. The Route serves inter-regional and local commuter traffic. The Route serves as a secondary truck access route and an important state system cross-link to lifeline State Routes 70 and 99.

Shippee Road intersects State Route 149 at approximately postmile 3.107. Left-turn pockets provide access to Shippee Road serving sparse residential housing to the south side of Route 149 which eventually connects into State Route 99, 2.1 miles south of Junction Route 149/99. To the right, a short segment of Shippee Road connects into Openshaw Road paralleling the north side of Route 149 serving as an access road to open-field grazing land use.

Several streams traverse Route 149 and bridge structures are found at three locations. There is a concrete box culvert at Gold Run Creek (PM 1.261), and concrete box girders at Dry Creek (PM 3.256) and Clear Creek (PM 3.723).

Current ADT volumes are approximately 12,700 and peak-hour volumes are approximately 1,200 with a LOS of D. The current peak-hour volume/capacity ratio is 0.45. Traffic is expected to increase by approximately three percent per year. This equates to a peak-hour volume of approximately 1,500 by 2010 and 1,900 by 2020.

State Route 70, south of State Route 149, and State Route 99, north of State Route 149, are four-lane facilities; conversely, State Route 149 is a 2-lane facility. This divergence constrains traffic flow through the State Route 149 corridor. State Route 149 has no median and passing movements occur in the opposing traffic stream; therefore, as traffic volumes increase, opportunities for passing movements decrease. As a result, traffic platoons develop due to the inability to pass which in turn deteriorate flow conditions and increase delay. The current operating characteristics are rated at a LOS of "D." Ten-year projections rate future no-build capacity deficiencies at a LOS of "D" and twenty-year projections rate future no-build capacity deficiencies at a LOS of "E".

Improvements to State Route 149 have been programmed in the STIP since 1992. The State Route 149 improvements include widening the existing facility to a four-lane fexpressway with a 61-foot to 72-foot median, 5-foot inside shoulders and 10-foot outside shoulder and the construction of F-5 interchanges at the intersections of State Route 149/70 and State Route 149/99. Construction is scheduled to begin in the spring of 2002. Future operational conditions will improve the LOS to "A" with the implementation of the 1992 programmed STIP improvements. In addition, these corridor improvements will provide freeway access to the only major metropolitan area in California not presently served by a freeway connection. Environmental studies and preliminary engineering are currently underway for the programmed improvements.

The State Route 149 improvements are part of the overall State Route 70/99 Corridor improvements to connect Sacramento to Chico on the freeway & expressway system. These are improvements that were recommended by the State Routes 70 and 99 Corridor Study (DKS Associates, July 1990), and subsequently confirmed by a Major Investment Study in 1995.

Projects Programmed (RTIP/STIP/SHOPP) **Projects Listed in Local Long-Range Planning Documents**

1992 & 1998 Widen the exiting facility to a four-lane

expressway and construct full interchanges at STIP

Programmed SR 149/70 and SR 149/99.

Project

LOCAL PLANNING JURISDICTIONS

Butte County Association of Governments

RTPA/ (BCAG) MPO

479 A Oro Dam Boulevard

Oroville, CA 95965

Butte County Air Quality Management

District (BCAQMD) Air Quality 2525 Dominic Drive Chico, CA 59528 District

The following information is a brief overview only. For specific environmental information, contact the Caltrans District 3 Environmental Offices.

Air Quality

Air Basin: Northern California Air Basin / Sacramento Valley Air Basin

Federal Air Quality Non-Attainment Designations:

OZONE: Attainment C0: Attainment

PM 10: Attainment

Land Use

Current land use along the SR 149 corridor consists primarily of open-field grazing and irrigated farmland. Seasonal crop impacts brought about by planting, growing and harvesting of agricultural land uses do not affect the peak LOS within the State Route 149 corridor. According to Butte County, future land use zoning within the State Route corridor is expected to remain Agriculture.

Modal Options

Transit:

- Public transit service is provided by Butte County Transit providing eighteen round trips daily connecting Chico and Oroville via State Route 149 between the hours of approximately 5:30 AM and 7:30 PM Monday through Friday and 8:00 AM through 6:30 PM on Saturdays and Sundays.
- Greyhound Bus Lines operates four round trip buses on State Route 149 per day with a seating capacity of 47 to 54 passengers per vehicle between Chico and Sacramento.
- · Amtrak Motor Coach operates three round trip buses on State Route 149 per day with a seating capacity of 44 passengers per vehicle between Chico and Sacramento.
- The Work Training Center (WTC) is the largest in-house social service transportation system in Butte County. Work Training Center vans operate seven round trips on State Route 149 per day transporting an average of six passengers per vehicle between Oroville and Chico.

Bikes:

State Route 149 is not designated as a bikeway; nevertheless, it is open to bicycle travel for shared use with motor vehicle traffic. Bicycles can also traverse between State Route 70 and 99 by way of State Route 191 and Durham Pentz Road or through Coal Canyon Road, Wheelock Road and Durham Pentz Road.

Bicycle access will be permitted on State Route 149 when it is upgraded to a four-lane expressway. However, bicycle access will be prohibited when State Route 149 is upgraded to the ultimate facility concept of a six-lane freeway. Butte County has identified a Class I Bikeway (Bike Path) paralleling State Route 149 in it's Countywide Master Bikeway Plan For Butte County (BCAG, Sep. 1998).

Park-and-Ride Lots:

According to the Circulation Element Butte County General Plan (May 1984, p. 10) an informal Park-and-Ride lot on SR 99 is located at SR 149. In addition, according to the Route Concept Report Route 149 (November 1986, p 4) an informal Park-and-Ride lot exists at the intersections of Routes 149 and 70.

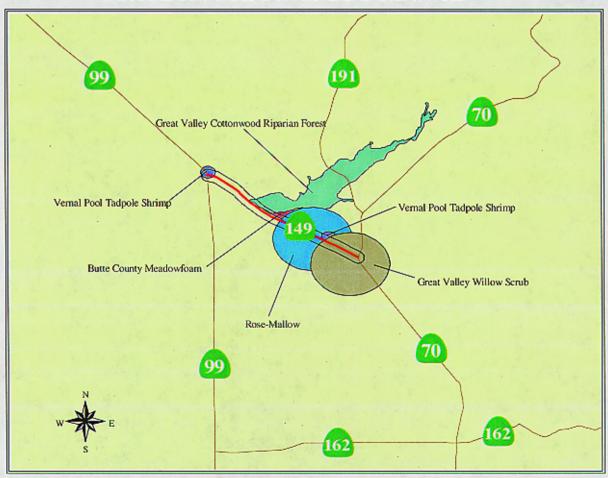
Having a park-and-ride lot at State Route 99/149 or State Route 70/149 does not appear to serve any particular community, commuter demand or modal connectivity. Presently, formal Park-and-Ride lots are located in and serve the communities of Chico and Oroville. Therefore, there is no functional need or demand for a formal park-and-ride facility within the SR 149 corridor at this time or in the immediate future.

California Natural Diversities Database

The California Natural Diversities Database (CNDDB) is an application created to allow for the ability to perform an environmental assessment. The CNDDB was used in this report to depict environmental resources that exist along State Route 149. Known environmental resources are displayed on the map illustrated below and can be evaluated for potential impacts that may result from future projects. These data provide an initial assessment of environmental issues and concerns that will need to be addressed during project planning and development. Additionally, this information can be used to evaluate the feasibility of a project and for examining different alternatives. These are biological resources that may be threatened or endangered. Feasibility of a project probably would only be an issue when there would be a direct impact to a Federal or State endangered species. It can also provide a preliminary estimate of time and staff resources that may be needed to comply with environmental assessment and documentation.

The following map identifies the status of habitats and species found within 300 meters of centerline on the existing State Route 149. This information does not represent all possible environmental constraints that may exist. If a future project were proposed within the State Route 149 corridor, an environmental assessment would be required.

STATE ROUTE 149 CNDDB RECORD



GLOSSARY OF ABREBUIATION & TERMS

- **AADT:** (Average Annual Daily Traffic) denotes that the daily traffic is averaged over one calendar year.
- **ADT:** (Average Daily Traffic) is the average number of vehicles passing a specified point during a 24-hour period.
- **AIR QUALITY NON-ATTAINMENT:** identifies non-attainment status for CO, Ozone and PM10 within the subject air basin.
- **AQMD:** (Air Quality Management District) is a regional agency, which adopts and enforces regulations to achieve and maintain state and federal air quality standards.
- **BCAG:** (Butte County Association of Governments) is the designated Regional Transportation Planning Agency for Butte County that prepares, adopts and submits a Regional Transportation program to the California Transportation Commission.
- **BPM:** (Beginning Post Mile) the starting point of each segment as defined by the highway post mile markers. (See EPM).
- **CAPACITY ENHANCEMENTS:** are new facilities projects and operational improvements, which add through lanes.
- **CBD:** (Central Business District) is the downtown core area of a city, generally an area of high land valuation, traffic flow, and concentration of retail business offices, theaters, hotels, and service businesses.
- CEQA: (California Environmental Quality Act) is a statute that requires all jurisdictions in the State of California to evaluate the extent of environmental degradation posed by proposed development or project. A 1970 law, which required those state agencies, regulate planning and development activity, with major consideration for environmental protection. The basic purposes of CEQA are to:
 - a. Inform governmental decision-makers and the public about the potential significant environmental effects of a proposed planning of development activity.
 - b. Identify ways environmental damage can be avoided of significantly reduced mitigation.
 - c. Prevent significant, avoidable environmental damage by requiring changes in projects through the use of alternative measures when those measures are feasible and overriding consideration.

- d. Disclose to the public the reasons why a governmental agency approved a project in the manner the agency chose if significant environmental effects are involved.
- **CEQA REVIEW:** is the review of environmental and other documents pursuant to CEQA Statutes & Guidelines.
- CIP: (Capital Improvement Program) is a seven year program of projects to maintain or improve the traffic level of service and transit performance standards developed and to mitigate regional transportation impacts identified by the CMP Land Use Analysis Program, which conforms to transportation related vehicle emissions air quality mitigation measures.
- CMA: (Congestion Management Agency) is the agency responsible for developing the Congestion Management Program and coordinating a monitoring its implementation.
- **CMS:** (Congestion Management System) is required by ISTEA to be implemented by states to improve transportation planning.
- **CMP:** (Congestion Management Program) is an integrated approach to programming transportation improvements. This approach requires detailed consideration of the complex relationships among transportation, land use and air quality.
- **CO:** (Carbon Monoxide) is an odorless, poisonous, flammable gas that is produced when carbon burns with insufficient oxygen.
- COG: (Council of Governments) is a voluntary consortium of local government representatives, form contiguous communities, meeting on a regular basis, and formed to cooperate on common planning and solve common development problems of their area. COG's can function as the RTPA's and MPO's in urbanized areas.
- **CONCEPT:** is a strategy for future improvements that will reduce congestion or maintain the existing level of service on a specific route.
- **CONCEPT FACILITY:** is a highway facility type and characteristics considered viable with or without improvement within the 20 year planning period given financial, environmental, planning ad engineering factors.
- **CONCEPT LOS:** is the highest and best level of service that can be attained by the end of the 20 year planning period based on the Concept Facility. The Urban standard is "E" and the rural standard is "D".
- **CONGESTION:** is defined by Caltrans as: reduced speeds of less than 35 mile per hour for longer that 15 minutes.

- CTC: (California Transportation commission) is a body established by Assembly Bill 402 (AB 402) and appointed by the Governor to advise and assist the Secretary of the Business, Transportation and Housing Agency and the legislature in formulating and evaluating state policies and plans for transportation.
- D/C: (Demand Capacity Ratio) is the relationship between the demand for vehicle trips on a facility, versus the number of vehicle trips that can be accommodated on that facility.
- **DSMP:** (District System Management Plan) is a part of the system planning process. The DSMP is the district's long range plan for management of transportation systems in its jurisdiction.
- **EPM:** (Ending Post Mile) the ending point of each segment as defined by the highway post mile markers.
- **FREEWAY CAPACITY:** is the maximum sustained 15 minute rate of flow that can be accommodated by a uniform freeway segment under prevailing traffic and roadway conditions in a specified direction.
- **FTIP:** (Federal Transportation Improvement Program) also referred to as the TIP. This is a short-range action plan to the long range RTP. It identifies specifically what projects will be funded within the next 3-7 years.
- **FUNCTIONAL CLASSIFICATION:** Guided by federal legislation, refers to a process by which streets and highways are grouped into classes or systems, according to the character of the service that is provided, i.e., Principal Arterial, Minor Arterial Roads, Collector Roads, Local Roads.
- HCM: (Highway Capacity Manual) revised in 1994 by the Transportation Research Board of the National Research Council, the HCM presents various methodologies for analyzing the operation (see Level of Service) of transportation systems as freeways, arterial, transit, and pedestrian facilities.
- **HSR:** (High Speed Rail) are trains that operate at 125 MPH or above.
- **HOT:** (High Occupancy Toll) are new HOV lanes that allow single occupant vehicles access for a fee.
- **HOV:** (High Occupancy Vehicle) are a lane of freeway reserved for the use of vehicles with more than a preset number of occupants; such vehicles often include buses, taxis and carpools.
- **IRRS:** (Interregional Road System) is a series of Interregional state highway routes, outside the urbanized areas, that provide access to, and links between the states economic centers, major recreational areas, and urban and rural regions.

ISTEA: (Intermodal Surface Transportation Efficiency Act) Federal legislation and funding Program adopted in 1991. It provides increased funding and flexibility for multimodal transportation programs. Update: ISTEA expired on September 30, 1997. In December 1997, Congress passed and the President signed a sixmonth extension of the law, holding funding to current levels and keeping program structure and formulas intact. This extension expired on March 31, 1998, with an obligation deadline of May 1, 1998. On June 9, 1998, the President signed into law PL 105 178, the Transportation Equity Act for the 215 Century (TEA 21) authorizing highway, highway safety, transit and other surface transportation programs for the next 6 years. TEA 21 builds on the initiatives established in the 1990 ISTEA.

ITSP: (Interregional Transportation Strategic Plan) describes and communicates the framework in which the state will carry out its responsibilities for the Interregional Improvement Program (IIP). It also identifies how Caltrans will work with regional agencies to consult and seek consensus on the relative priority of improvements. The plan is evaluated in terms of its progress in carrying out its objectives, strategies and actions and updated accordingly on a biennial basis.

LOCAL AND REGIONAL LOS STANDARDS: identifies the level of service standard set by local and regional jurisdictions in general plans and congestion management programs.

LOS: (Level of Service) is a qualitative measure describing operational conditions within a traffic stream; generally described in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. LOS A represents free flow, LOS F represents gridlock.

MODEL, MODE CHOICE: Is a model used to forecast the proportion of total person trips on each of the available transportation modes.

MPO: (Metropolitan Planning Organization) according to U.S. Code, the organization designated by the governor and local elected officials as responsible, together with the state, for the transportation planning in an urbanized area. It serves as the forum for cooperative decision making by principal elected officials of general local government.

MTA: Metropolitan Transportation Authority (Metro Bus Lines) is a network of subways, busses, and railroads providing alternate transportation services to travelers.

NTN: (National Truck Network)

MTP: (Metropolitan Transportation Plan)

MULTI MODAL: Pertaining to more than one mode of travel.

NATURAL DIVERSITY INFORMATION: identifies special status of habitats and species found within 300 meters of centerline of the existing highway facility.

NHS: (National Highway System) consist of 155,000 miles (plus or minus 15 percent) of the major roads in the U.S. Included will be all interstate routes, a large percentage of urban and rural principal arterials, the defense strategic highway network, and strategic highway connectors.

OZONE: (O₃) a form of oxygen with a peculiar odor suggesting that of weak chlorine. It is produced when an electrical spark is passed through air or oxygen.

PEAK: (Peak Period, Rush Hours): is defined as follows:

- The period during which the maximum amount of travel occurs. It may be specified as the morning (a.m.) or afternoon or evening (p.m.) peak.
- The period during which the demand for transportation service is the heaviest. (AM Peak period represents 6:30 a.m. to 8:30 a.m. and PM Peak period represents 3:00 p.m. to 6:00 p.m.)

PM: (Post Mile) is the mileage measured in statute miles from a county line or the beginning of a route to another county line or the ending of the route. Each post mile along a route in a county is a unique location on the State Highway System.

PM10: is particulate matter with a diameter of 10 microns of less.

PM2.5: is particulate matter with a diameter of 2.5 microns or less.

PKm: (Post Kilometer) is the mileage measured in kilometers from a county line or the beginning of a route to another county line or the ending of the route. Each post mile along a route in a county is a unique location on the State Highway System.

PSR: (Project Study Report) is the pre-programming document required before a project may be included in the STIP.

RIP: Regional Improvement Plan

RTIP: (Regional Transportation Improvement Program) is a list of proposed transportation projects submitted to the CTC by the regional transportation planning agency, as a request for state funding through the Flexible Congestion Relief (FCR) and Urban and commuter Rail Programs. The individual projects are first proposed by local jurisdictions (CMA's in urbanized counties), then evaluated and prioritized by the RTPA for submission to the CTC. The RT1P has a seven-year planning horizon, and is updated every two years.

RTP: (Regional Transportation Plan) is a comprehensive 20 year plan for the region, updated every two years by the regional transportation planning agency. The RTP includes goals, objectives, and policies, and recommends specific transportation improvements.

RTPA: (Regional Transportation Planning Agency) is the agency responsible for the preparation of RTP's and RTIP's and designated by the State Business Transportation and Housing Agency to allocate transit funds. RTPA's can be local transportation commissions, COG's, MPO's or statutorily created agencies.

RURAL: Used to describe areas lying outside the U.S. Census urban area boundary, less than 2,500 population (less than 5,000 population for Federal-Aid highway purposes).

SACOG: (Sacramento Area Council of Governments) is the Regional Planning Agency for the Sacramento Region, and is responsible for the preparation and adoption of a Regional Transportation Improvement Program (RTIP) for Sacramento, Sutter, Yolo, and Yuba counties.

SHOPP: (State Highway Operation and Protection Program) is a four-year program limited to projects related to State highway safety and rehabilitation.

SIP: State Improvement Plan

SR: (State Route) are highways within the state, which are distinctively designed to serve intrastate and interstate travel.

SRTD: (Sacramento Regional Transit District)

SRTP: (Short Range Transit Program) is a five year comprehensive plan required by the Federal Transit Administration for all transit operators receiving federal funds. The plans establish the operator's goals, policies, and objectives, analyze current and past performance, and describe short-term operational and capital improvement plans.

STIP: (State Transportation Improvement Program) is a list of transportation projects, proposed in RTIP and the PSTIP, which are approved for funding by the CTC. The STIP has two main funding components: the RIP and the IIP. Currently, after SB 45 the STIP was changed from a 7-year action plan to an interim 6-year plan. At the year 2000 and thereafter, the STIP will be a 4 year plan with updates every two years.

STRAHNET: (Strategic Highway Corridor Network)

TASAS: (Traffic Accident Surveillance and Analysis System) is a system that provides a detailed list and/or summary of accidents that have occurred on highways, ramps, or intersections in the State Highway System. Accidents can be selected by location, highway characteristics, accident data codes and combinations of the above.

TCR: (Transportation Concept Report) is a Route Concept Report (RCR) that analyzes a transportation corridor service area, establishes a twenty-year transportation planning concept and identifies modal transportation options and applications needed to achieve the twenty year concepts.

TOT/MVM: (Total Accidents per Million Vehicle Miles)

TRAFFIC CONDITIONS: are any characteristics of the traffic stream that may affect capacity or operations, including the percentage composition of the traffic stream by vehicle type and driver characteristics (such as the differences between weekday commuters and recreational drivers).

TRAFFIC FORECAST: Is a best estimate of the future conditions, demand and resulting volumes. A forecast also identifies whether or not the subject segment of a route is designated as being part of a system. National Highway System (NHS), Interregional Highway System (IRRS), Freeway/Expressway System, Scenic Highway, National Truck Network, Terminal Access Route for the National Truck Network, Strategic Highway Network (STRAHNET), Highways of Regional Significance.

TSM: (Transportation System Management) is that part of the urban transportation Process undertaken to improve the efficiency of the existing transportation system. The intent is to make better use of the existing transportation system by using short term, low capital transportation improvements that generally cost less and can be implemented more quickly than system development actions.

URBAN: is that area lying inside the U.S. Census urbanized boundary.

UTPS: (Urban Transportation Planning System) is a tool for multimodal transportation planning developed by the Urban Mass Transportation Administration (now Federal Transit Administration) and the Federal Highway Administration. It is used for both long and short-range planning, particularly system analysis and covers both computerized and manual planning methods. UTPS consists of computer programs, attendant documentation, user guides and manuals that cover one or more of five analytical categories: highway network analysis, transit network analysis, demand estimation, data capture and manipulation, and sketch planning.

V/C: (Volume/Capacity) is defined, as V/C is a ratio of number of vehicles operating to capacity for a traffic facility.